

CLAIMS

1. A method for determining a paint formulation for producing a paint characterized by desired color coordinates in a three-dimensional color space and desired durability characteristics from a set of known constituents,

5 said method comprising:

providing a plurality of color coordinates, each of the color coordinates corresponding to paint formulations having respective diverse apportionments of the known constituents;

10 providing durability data related to durability characteristics exhibited by the paint formulations having the respective diverse apportionments of the known constituents;

performing regression of the color coordinates and the diverse apportionments of the known constituents to establish a set of interdependent equations having first variables corresponding to the known constituents and
15 second variables corresponding to the color coordinates;

providing coordinates of a desired color; and

20 recursively solving the set of interdependent equations for values of the first variables which substantially equate the second variables to color coordinates substantially near to the desired color wherein the values of the first variable are constrained by the durability data related to the durability characteristics exhibited by the paint formulations.

2. A method as in claim 1, wherein the one of the durability characteristics is selected from a group consisting of gloss, adhesion, distinctness of image and fade.

5 3. A method as in claim 1, wherein the paint formulations are predetermined such that at least one of the paint formulations exhibits at least one durability characteristic near failing wherein failing is defined by a predetermined length of time for which the at least one paint formulation should exhibit an acceptable level of the at least one durability characteristic according to industry standards.

4. A method of determining a paint formulation for producing a paint characterized by desired color coordinates in a three-dimensional color space from a set of known constituents, the method comprising;

15 providing a plurality of paint samples, each paint sample characterized by respective diverse constituent apportionment data;

providing respective color coordinate data defining, for each paint sample, color position in a three dimensional color space;

20 providing durability data related to the durability characteristics exhibited by each of the paint samples;

relating the constituent apportionment data to the color coordinate data to derive a formulation model characterized by correlation of the known constituents to color attributes defining color positions in the three

dimensional color space, each color position further defined by the durability characteristics exhibited by its respective paint sample;

applying the color coordinate data and the durability data to a select paint color in the three dimensional color space to determine constituent

5 apportionments corresponding to the select paint color.

5. A method as in claim 4, wherein the one of the durability characteristics is selected from a group consisting of gloss, adhesion, distinctness of image and fade.

10 6. A method as in claim 4, wherein the apportionment data is predetermined to assist in defining the durability data such that at least one of the samples is near failing in durability as defined by the formulation model.